



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF  
AIR AND RADIATION

OCT - 1 1986

MEMORANDUM

**SUBJECT:** Guideline S-26 - Enforcement of the Arsenic NESHAP  
for Glass Manufacturing Plants (40 CFR Part 60 Subpart N)

**FROM:** Director  
Stationary Source Compliance Division  
Office of Air Quality Planning and Standards

**TO:** Air and Waste Management Division Director  
Region II

Air Management Division Directors  
Regions I, III, V and IX

Air, Pesticides, and Toxics Management Division Directors  
Regions IV and VI

Air and Toxics Division Directors  
Regions VII

The attached guideline is being forwarded to you to assist you in the implementation and enforcement of the arsenic National Emission Standards for Hazardous Air Pollutants (NESHAPS) for glass manufacturing plants (Subpart N).

If you have any questions or comments on this guideline, please contact Doreen Cantor in the Stationary Source Compliance Division at FTS 382-2874.

  
Edward E. Reich

Attachment

cc: Michael Alushin  
Bob Ajax  
George Walsn

Stan Curffe  
Ron Myers  
Jan Myers  
Jim Engel

REG 25 1998  
ECDC

In almost all civil actions to enforce asbestos regulations against demolition and renovation sources, the action is filed after the violations have occurred.\* Injunctions are therefore directed at future demolition and renovation activity. Injunctive relief should be sought against contractors, since they are likely to be handling asbestos again in the ordinary course of business. An injunction against future violations in a court order or consent decree vests the court with continuing jurisdiction until the termination date of the decree to enforce the NESHAP requirements. The prospect of a contempt action for future violations may serve as a more effective deterrent than would otherwise exist.

Facility owners are situated differently, since they are not ordinarily in the business of asbestos removal. In determining whether to seek an injunction, the Agency should consider the potential for future violations during the life of the decree. Injunctions should be sought against facility owners if the demolition or renovation which was the subject of the lawsuit is part of an ongoing series of demolition or renovation projects, e.g., a program of asbestos removal from buildings within a school district, or if the facility owner plans further projects involving friable asbestos. If these factors are not present, an injunction is not necessary.

Injunctive relief need not be limited to merely a command to comply with the regulations. Equitable relief should be fashioned to try to prevent, at a minimum, recurrence of the violations alleged in the complaint. If, for example, a defendant gave incomplete notification of a demolition project, the Agency could seek to enjoin that party to use a specific form in submitting asbestos notifications. If the facility owner hired as the lowest bidder a contractor unqualified to do asbestos work, we may wish to enjoin the owner to address NESHAP compliance in all bid specifications for jobs involving asbestos removal. It is not possible to provide comprehensive guidance on the form of injunctive relief to be sought in all cases, but the specifics of an injunction can be worked out among the litigation team as the case develops.

Questions regarding this policy should be directed to Elliott Gilberg of the Air Enforcement Division at FTS 382-2864.

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\*If a civil action is filed for an ongoing violation, injunctive relief should be sought against all defendants, to afford the greatest chance of effectuating immediate compliance.

**Addressees:**

**Regional Counsels  
Regions I-X**

**Air Management Division Directors  
Regions I, III, V, and IX**

**Air and Waste Management Division Directors  
Regions II and VI**

**Air and Toxics Division Directors  
Regions VII, VIII, and X**

**Air, Pesticides, and Toxics Management Division Director  
Region IV**

**Regional Enforcement Contacts  
Regions I-X**

**cc: David Buente, Acting Chief  
Environmental Enforcement Section  
Department of Justice**

**S-26 - GUIDELINE FOR THE ENFORCEMENT OF THE  
ARSENIC NESHAP REGULATIONS  
FOR GLASS MANUFACTURING PLANTS**

This guideline is being issued to assist the Regional Offices in the enforcement of one of the NESHAP regulations for the control of arsenic emissions. Three types of facilities are required to be controlled by these regulations: (1) glass manufacturing plants, (2) primary copper smelters, and (3) arsenic trioxide and metallic arsenic production facilities. This guideline addresses glass manufacturing plants only.

Arsenic was declared a hazardous air pollutant on June 5, 1980. Regulations were proposed for the control of arsenic under Section 112 of the Clean Air Act, National Emission Standards for Hazardous Air Pollutants (NESHAPS) 40 FR 59532, on August 22, 1983. These regulations were promulgated on August 4, 1986. Since this regulatory framework has been previously utilized for the control of asbestos, beryllium, mercury, vinyl chloride, and benzene, additional helpful information is available in Guidelines S-17 thru S-20, which offer some general guidance relative to the procedural requirements of the NESHAP program.

**Summary of Requirements**

The standard covers each glass melting furnace that uses commercial arsenic as a raw material, except that pot furnaces (refractory vessels in which glass is melted by indirect heating and where the openings are covered with refractory stoppers during melting) are exempted. Each owner or operator must either 1) vent all inorganic arsenic emissions from each glass melting furnace to a control device and reduce emissions by at least 85%, the level of reduction achievable by an electrostatic precipitator or fabric filter (§61.162(a)(2) and (b)(2)), or 2) maintain uncontrolled (i.e. preceding an add-on control device) arsenic emissions at 2.5 Mg/year (2.75 TPY) or less for existing plants (§61.162(a)(1)), or at 0.4 Mg/year (0.44 TPY) or less for new plants (§61.162(b)(1)).

If the owner or operator intends to meet the standard by using a control device, s/he is required to continuously monitor opacity and temperature, and to submit semiannual reports of excess opacity. An owner or operator may bypass the control device for a limited period of time for designated purposes such as maintenance of the control device, upon prior approval from the Regional Office.

If the owner or operator intends to meet the standard by limiting uncontrolled arsenic emissions, s/he is required to calculate the uncontrolled arsenic emissions semiannually, and to report if the emission rate is above the applicable limit.

#### A. Source Notification.

The Regional Offices should notify all potentially affected sources immediately following the promulgation of the arsenic NESHAP regulations, or immediately upon identification of affected sources anytime after promulgation (see guideline S-17 for example notification). A list of all known glass manufacturing plants using arsenic as a raw material is attached (Table 1). This list includes 75 furnaces at 27 plants, and includes both controlled and uncontrolled furnaces, and furnaces emitting arsenic at levels both above and below the threshold of 2.5 Mg/yr. This regulation would require two of these furnaces to install additional controls or reduce arsenic usage, and would require at least six furnaces to maintain their present controls. However, this list may not be exhaustive, and it includes many emission estimates. Since new plants may have been constructed, additional plants may have begun using arsenic as a raw material, and some plants may be unidentified as of yet, additional investigation should be made to complete the list. Also, a number of companies are investigating the possibility of reducing or eliminating arsenic in soda-lime batch formulations, which may reduce the number of affected facilities. Preferably, all glass plants should be notified of the regulations, because they will become subject if they begin using arsenic as a raw material in the future. All affected sources should be coded into CDS.

**B. Determination of Compliance (40 CFR 61.164)**

**1. Initial Report (40 CFR 61.10)**

The owner or operator of each existing source is required to submit an initial report to the Administrator by November 2, 1986. This initial report should include:

- name and address of the owner or operator,
- source location,
- brief description of the nature, size, design, and method of operation (including capacity and emission points),
- the average weight of arsenic processed per month over the previous 12 months as determined by direct measure or materials balance,
- a description of the existing control equipment (including efficiency), and
- a statement of the feasibility of complying with the standard by November 2, 1986.

If the owner or operator is unable to comply with the standard within the 90-day period, s/he may apply for a waiver of compliance (See Guideline S-19). Sources which need to install control equipment may be granted a waiver for up to two years if the time is needed for purchase and installation. Reasonable compliance schedules for installing fabric filters and ESP's are attached (Table 2).

For any source for which a performance test is required, the owner or operator must notify EPA at least 30 days before the test and must submit the results to EPA within 60 days of the test, as indicated in the next section.

For any source which can demonstrate compliance by means of an emission calculation alone, the owner or operator must submit to EPA by September 18, 1986 (or within 45 days of start-up or modification) a written report of the calculated estimates of arsenic emissions. (NOTE: In the proposal, this report was required to be submitted within 90, rather than 45, days. Sources may be unprepared for this change and may require more time.)

For new and modified sources (for which construction or modification commenced after July 20, 1983, including any existing furnace which begins to use arsenic - see following discussion), the owner or operator must apply for approval to construct or modify (required by §61.07) and provide process and emission data so that EPA may determine if the source will be able to comply with the standard. After approval, the owner or operator is required to notify EPA of the anticipated and actual start-up dates as indicated in §61.09.



Determination of Whether a Source is "Modified" based on Arsenic Usage

Background Information

"Modification" is defined in the General Provisions, 40 CFR §61.02 as "any physical change or change in the method of operation . . . which increases the amount of any hazardous air pollutant . . . or which results in the emission of any hazardous air pollutant not previously emitted, except that . . . an increase of the production rate, if such increase does not exceed the operating design capacity . . . (or) an increase in hours of operation . . . (shall not be considered a change in the method of operation)".

"New source" is defined as "any stationary source, the construction or modification of which is commenced after (proposal)".

The preamble to the promulgated standards (Federal Register Vol. 51, No. 149, August 4, 1986, p. 27997) states "(s)ince proposal, the use of arsenic in some glass melting furnaces has been eliminated and the Agency believes that this trend is likely to continue. The companies that operate these furnaces have indicated that they do not plan to resume using arsenic. The cutoff applied to new or modified glass melting furnaces is based on consideration of cost and economic factors and has been retained in the promulgated standard to discourage reintroduction of arsenic in furnaces that have recently eliminated its use and to discourage future use. The Agency believes that this is appropriate to prevent risks from increasing near those furnaces that have recently eliminated arsenic use and because reasonable alternatives to exceeding this cutoff level are available at these facilities. These include the use of low-arsenic glass recipes and the use of controlled furnaces for production of those glass types which would result in uncontrolled emissions of arsenic of more than 0.4 Mg (0.44 ton) per year..

### Discussion

Many furnaces subject to the arsenic NESHAP will typically melt a variety of glasses with different arsenic contents and emission factors. It is necessary to determine whether furnaces will become modified sources, and thus subject to the more stringent emission limit, on the basis of these changes in the method of operation.

The above information indicates that if a furnace has never used arsenic and starts arsenic use any time after proposal, that furnace should be considered a modified source.

If a furnace has used arsenic in the past, but has ceased its use, it becomes a modified source at any point after proposal that it resumes the use of arsenic. Because arsenic usage is to be calculated as a rolling 12-month average every 6 months, if a furnace does not use arsenic during any such 12-month period, (starting from the 12-month period immediately preceeding proposal) that furnace should be considered a non-arsenic furnace, and any addition of arsenic in the future will cause this furnace to become subject to the more stringent standard for new and modified furnaces.

If a furnace has continuously used arsenic since the 12-month period before proposal, it would be a modified source if arsenic emissions increase above previous levels. Operating records should be reviewed to determine if there has been any 12-month rolling average where arsenic emissions were higher than a previous 12-month period. If so, the source should be considered modified. If not, the semiannual rolling averages calculated by the source should routinely be monitored to see that emissions do not increase in the future. If emissions do increase, the source is modified and is required to either install controls or change operation in some way so that uncontrolled emissions will be limited to 0.4 Mg/yr arsenic.

There are several exceptions to this:

(1) A source may argue that this period of lowest arsenic emissions is not representative of the typical operation of that furnace. These claims should be evaluated on a case-by-case basis. However, if the reason for the low arsenic emissions was that the furnace was successfully using a substitute for arsenic, then the lower emission rate should be considered representative operation.

(2) If the increase in arsenic emissions is due solely to an increase in production, then the furnace should not be considered "modified". However, this refers to the production rate and hours of operation of the furnace, not for the individual glass types. Therefore, if a furnace has increased production of a high-arsenic glass but at the same time has decreased production of a low-arsenic or non-arsenic glass such that overall arsenic emissions increase but total production remains constant, then the furnace should be considered modified.

In summary, for all furnaces which choose to demonstrate compliance with the 2.5 Mg/yr uncontrolled arsenic emission standard for existing sources, their operating records for the period from August 22, 1982 (12 months before proposal) to the present, as well as all future semiannual calculations of uncontrolled arsenic emissions, should be reviewed to determine whether the furnace has been modified because of these changes in operation.

2. Emission Test (40 CFR 61.164)

By November 2, 1986 (or within 90 days of startup for a new source), the owner or operator must test emissions from the source unless a waiver of emission testing is obtained under §61.13 (See Guideline S-20).

The owner or operator must provide the Regional Office at least 30 days prior notice of the emission test and demonstration of the opacity monitoring system, if applicable.

Emission tests are to be conducted while the source is operating under conditions that are representative of those from which the maximum arsenic emissions will result, as may be specified by the Regional Office. Usually, this will be under conditions representative of the expected maximum (allowable) production rate. However, for sources melting more than one type of glass, or for sources with multiple furnaces emitting to a single control device, the emission test should be conducted while the source is operating at the expected maximum production rates for the glass types generating the greatest amounts of arsenic. Furnaces producing non-arsenic glass should also be operating during the emission test, as would be representative of a source's usual operation. Another test may be required later if source operation changes so that the original testing operating conditions are no longer representative of "worst case" operation.

The owner or operator must furnish the Regional Office with a written report of the emission test results and associated calculations within 60 days of the test, and must retain records of emission test results and other data needed to determine emissions for two years.

Furnaces with Uncontrolled Arsenic Emissions Above  
2.5 Mg/yr (existing) or 0.4 Mg/yr (new or modified)  
(§61.164(e))

Unless an alternative test method is approved (refer to Guideline S-18 for procedure), the owner or operator of each furnace must demonstrate compliance with the 85% arsenic reduction requirement in §61.162(a)(2) or (b)(2) by using Method 108 to determine the concentration of arsenic in the inlet and outlet gas streams to the control device. Each emission test is to consist of three 60-minute test runs, each consisting of simultaneous testing of the inlet and outlet gas streams. The gas streams must contain all of the gas exhausted from the gas melting furnace.

The percent reduction for each run will be computed as follows:

$$D = \frac{(C_b - C_a) \times 100}{C_b}$$

D = percent emission reduction

C<sub>b</sub> = arsenic concentration in stack gas entering the control device, as measured by Method 108

C<sub>a</sub> = arsenic concentration in stack gas exiting the control device, as measured by Method 108

The average percent reduction is equal to the arithmetic mean of the results for the three runs, and must be equal to or greater than 85% for the source to be in compliance.

Furnaces with Uncontrolled Arsenic Emissions Under  
2.5 Mg/yr (existing) or 0.4 Mg/yr (new or modified)  
(§61.164(c) and (d))

If less than 8.0 Mg arsenic/year (8.8 TPY) is added to an existing furnace, or less than 1.0 Mg arsenic/year (1.1 TPY) is added to a new or modified furnace, the owner or operator will usually be able to demonstrate compliance with the uncontrolled emission limits by an emission calculation only. A theoretical arsenic emission factor should be calculated for each type of glass produced during the 12-month period, as follows:

$$T_i = (A_{bi} \times W_{bi}) + (A_{ci} \times W_{ci}) - A_{gi}$$

$T_i$  = theoretical uncontrolled arsenic emission factor (g/kg) for each glass type (i)

$A_{bi}$  = fraction by weight of arsenic in fresh batch for each glass type (i)

$W_{bi}$  = weight (g) of fresh batch melted per kg of glass produced for each glass type (i)

$A_{ci}$  = fraction by weight of arsenic in cullet for each glass type (i)

$W_{ci}$  = weight (g) of cullet melted per kg of glass produced for each glass type (i)

$A_{gi}$  = weight (g) of arsenic per kg glass produced for each glass type (i)

The theoretical uncontrolled arsenic emissions for the 12-month period is estimated as follows:

$$Y_i = \frac{(T_i \times G_i)}{10^6}$$

$Y_i$  = theoretical uncontrolled arsenic emission estimate for the 12-month period for each glass type (Mg/yr)

$T_i$  = theoretical uncontrolled arsenic emission factor for each type of glass produced during the 12-month period (as calculated above)

$G_i$  = kg of each arsenic-containing glass type (i) produced during the 12-month period

The total theoretical uncontrolled arsenic emissions for each 12-month period is equal to the sum of these emission estimates ( $Y_i$ ) for each glass type produced. If this is equal to or less than 2.5 Mg for existing plants, or 0.4 Mg for new plants, the source is in compliance and no emission testing is required. If the total is above these limits, then the source is required to test as described below.

The following procedure is required for existing sources using more than 8.0 Mg arsenic/year, new sources using more than 1.0 Mg arsenic/year, and for sources using less than these amounts but which are unable to demonstrate compliance solely by the calculation procedure above. The theoretical uncontrolled arsenic emission factors ( $T_i$ ) and estimates ( $Y_i$ ) should again be calculated for each glass type produced during the 12-month period as described above. Emission testing, using Method 108, must then be conducted during production of the glass type with the highest theoretical uncontrolled arsenic emissions. The actual uncontrolled arsenic emission factor should be computed as follows:

$$R_a = \frac{E_a}{P}$$

$R_a$  = actual uncontrolled arsenic emission factor (g/kg)

$E_a$  = actual uncontrolled arsenic emission rate, from Method 108 (g/h)

$P$  = rate of glass production (kg/h), determined by dividing the weight of glass pulled from the furnace during the emission test by the number of hours taken to perform the test

A furnace correction factor ( $F$ ) to relate the theoretical and actual uncontrolled arsenic emission factors should be calculated as follows ( $R_a$  and  $T_i$  should be the same glass type):

$$F = \frac{R_a}{T_i}$$

The total uncontrolled arsenic emission rate for the 12-month period should be computed by applying this furnace correction factor to all of the theoretical emission factors, as follows:

$$U = \sum_{i=1}^n \frac{(T_i \times F_i \times G_i)}{10^6}$$

U = total uncontrolled arsenic emission rate (Mg/year)

n = number of arsenic-containing glass types produced during the 12-month period

If the total uncontrolled arsenic emission rate is less than 2.5 Mg/yr for an existing furnace, or 0.4 Mg/yr for a new furnace, the source is in compliance. If the total is above these values, then the source is in violation and must install controls. However, the source may opt to conduct Method 108 tests on the remaining glass types compute type-specific correction factors, and attempt to demonstrate compliance in that way.

Example 1:

If the glass type produced during the Method 108 test is the only glass type to be produced for the initial 12-month period, then the actual arsenic emission factor can simply be multiplied by the amount of glass produced to calculate total yearly arsenic emissions. (If less than 8.0 Mg (or 1.0 Mg) arsenic/year were added to the furnace, a Method 108 test would be unnecessary.)

$$E_a = .045 \text{ lb/hr (from Method 108)}$$

$$P = 900 \text{ lb/hr}$$

$$R_a = \frac{E_a}{P} = \frac{.045}{900} = .1 \text{ lb As/ton glass}$$

$$\text{Total yearly arsenic emissions} = (R_a) (\text{annual production}) = (.1 \text{ lb/ton})(4000 \text{ ton/yr}) = .2 \text{ TPY As}$$



Example 2:

If two or more glass types are produced, a theoretical arsenic emission factor, based on a materials balance, should be calculated for every type of glass that will be produced. This should be multiplied by the correction factor to calculate an actual arsenic emission factor for each type of glass. Each actual arsenic emission factor should then be multiplied by the amount of that glass that will be produced to calculate yearly arsenic emissions for each glass type, and the results summed to calculate total yearly arsenic emissions.

Assume 3 types of glass (A,B,C) are produced in one furnace

For Glass A, from above,  $R_a(A) = .1 \text{ lb As/ton glass}$

Annual production of Glass A = 3000 TPY

Theoretical arsenic emission factor ( $T_A$ ) =  
.08 lb As/ton glass

Correction factor =  $\frac{.1}{.08} = 1.25$

For Glass B,  $T_B = .075 \text{ lb/ton}$

$R_a(B) = (.075)(1.25) = .09 \text{ lb/ton}$

Annual production of Glass B = 500 TPY

For Glass C,  $T_C = .4 \text{ lb/ton}$

$R_a(C) = (.4)(1.25) = .5 \text{ lb/ton}$

Annual production of Glass C = 750 TPY

Total yearly arsenic emissions

=  $(R_a(A))(A's \text{ annual production}) + (R_a(B))(B's \text{ annual production}) + (R_a(C))(C's \text{ annual production})$

=  $(.1 \text{ lb/ton})(3000 \text{ TPY}) + (.09 \text{ lb/ton})(500 \text{ TPY}) + (.5 \text{ lb/ton})(750 \text{ TPY})$

=  $.15 \text{ TPY} + .021 \text{ TPY} + .19 \text{ TPY} = .36 \text{ TPY}$

The Test Methods in Appendix B of Part 61 are to be used unless an alternative method has been approved by the Director of the Emission Standards and Engineering Division. If the results obtained by an alternative method are thought to be inaccurate, the Regional Office may require the use of a reference method. If the results obtained by the reference method do not agree with those of the alternative method, the results obtained by the reference method will prevail.

C. Emission Monitoring (40 CFR 61.163)

An owner or operator complying with §61.162(a)(2) or (b)(2) must install, calibrate, maintain, and operate

- 1) a continuous monitoring system for measuring opacity of the exhaust gas and
- 2) a monitoring device for the continuous measurement of the temperature of the gas entering the control device.

These should be installed, and their operational status verified, prior to the emissions test. A report of the CEM evaluation should be furnished to the Regional Office within 60 days of the evaluation. The purpose of the transmissometer will be to indicate when the control device may not be operating properly and emissions may be exceeding the applicable limit. The reference method used to demonstrate compliance with the emission limitation remains Method 108. As described in the following discussion, a sourcespecific opacity limit is to be derived for each individual facility, which will be based on the opacity during an emissions test demonstrating compliance. This level would be viewed as indicative of a properly operated and maintained control device.

Opacity should be monitored during each of the three runs of the emission test. During the emission test, process and control equipment should be operated so that opacity is minimized, as may be specified by the Regional Office. Monitoring results should be reduced to 6-minute averages, and a source-specific opacity limit corresponding to the 97.5% upper confidence level of a normal or lognormal (whichever is more representative) distribution of the average opacity values should be determined. Temperature of the gas entering the control device should also be monitored during each test run, and 15-minute temperature averages should be determined. An owner or operator may redetermine both these values if this procedure is repeated during each test run of an emission test demonstrating compliance.

All continuous monitoring systems should be in continuous operation as described in §61.163(f). All opacity data should be reduced to 6-minute averages, not including data from periods of breakdowns, repairs, calibration checks, and zero and span adjustments. Fifteen-minute averages of temperature should also be calculated.

The Regional Office may approve, after receipt and consideration of written application, an alternative continuous monitoring system (parameter-based, etc.) to replace the CEM.

D. Recordkeeping (40 CFR 61.165)

All owners or operators of glass melting furnaces using arsenic as a raw material are subject to recordkeeping and reporting requirements. Each owner or operator must retain for a minimum of two years the following information:

- 1) all measurements, including continuous monitoring for opacity and temperature,
- 2) all calculations used for emission estimates and all records of emission test data,
- 3) all monitoring system performance evaluations, including calibration checks and adjustments,
- 4) occurrence and duration of all startups, shutdowns or malfunctions of furnace,
- 5) all malfunctions of air pollution control system,
- 6) all periods when any continuous monitoring system or device is inoperative,
- 7) all maintenance and repairs made to each air pollution control system, continuous monitoring system, or monitoring device, and
- 8) if permission to bypass the control device is obtained, the dates the control device is bypassed and steps taken to minimize arsenic emissions during that period.

Additionally, each owner or operator of a glass plant complying with §61.162(a)(1) or (b)(1) must determine and record every six months:

- 1) the uncontrolled arsenic emission rate for the preceeding 12-month period (or 6-month period, for the first determination) using measured or calculated arsenic emission factors (as applicable) multiplied by each respective glass production rate, and

- 2) an estimate of the uncontrolled arsenic emission rate for the forthcoming 12-month period, taking into consideration anticipated changes in production rates, glass types, and other factors.

For these semiannual determinations, it would not be necessary to conduct a Method 108 test again. The initial correction factor could be applied again to calculate the measured arsenic emission factor for each glass type.

E. Reporting (40 CFR 61.165)

Each owner or operator complying with §61.162(a)(2) or (b)(2) must submit written reports to the Administrator semiannually if excess opacity occurred during the preceeding six-month period. An occurrence of excess opacity is any 6-minute period where the average opacity exceeded the source-specific opacity level. Excess opacity reports would not be used to cite a source in violation, but would alert enforcement personnel that the control device may not be operated and maintained properly and to indicate that an inspection and/or emission test may be appropriate. All semiannual reports should include:

- 1) magnitude of excess opacity, conversion factors used, dates and times of each occurrence,
- 2) specific identification of excess opacity occurring during start-ups, shutdowns, and malfunctions, and
- 3) dates and times of each period when the continuous monitoring system was inoperative (except for zero and span checks) and the nature of repairs or adjustments.

These reports must be postmarked by the 30<sup>th</sup> day following the end of the six-month period.

An owner or operator may apply to the Regional Administrator for approval to bypass the control device for limited periods, as described previously. This application must be submitted at least 60 days before the bypass period is to begin, and should include:

- 1) name and address of owner or operator,
- 2) location of source,
- 3) description of nature, size, design, and operation of source,
- 4) the reason it is necessary to bypass the control device,
- 5) the length of time needed to bypass the control device,

- 6) steps that will be taken to minimize arsenic emissions during the bypass,
- 7) the quantity of emissions that would be released if no steps were taken to reduce emissions,
- 8) the expected reduction in emissions due to steps taken during the bypass to minimize emissions, and
- 9) the type of glass to be produced during the bypass and an explanation of why non-arsenic or lower-arsenic glass could not be melted during the bypass period.

If an owner or operator of a source complying with the 85% arsenic reduction requirement wishes to reduce arsenic usage and comply with the uncontrolled arsenic emission limitation instead, s/he should notify the Regional Office of this change and include the necessary calculations and emission test data to demonstrate that uncontrolled emissions will remain below 2.5 (or 0.4) Mg/year.

Each owner or operator complying with §61.162 (a)(1) or (b)(1) must report the uncontrolled arsenic emission rate if uncontrolled arsenic emissions exceed 2.5 Mg/yr for existing plants, or 0.4 Mg/yr for new plants. If estimates show that arsenic emissions have exceeded 2.5 (or 0.4) Mg/yr for the preceeding 12-month period (or 6-month period, in a first report following the compliance demonstration), this is a violation and must be reported within 10 days of the end of the 6-month reporting period. If estimates show that arsenic emissions will exceed 2.5 (or 0.4) Mg/yr, the owner or operator must comply with §61.162 (a)(2) or (b)(2) and, within 10 days, notify the Regional Office of the anticipated date of the emission test.

Table 1: Emission Control for Arsenic Using Glass Plants

Plant No.	Name/Location	Number of Furnaces	Expected Compliance Method <sup>a,b</sup>
1	Corning, Martinsburg, WV	1	PR <sup>c</sup>
2	Corning, Charleroi, PA	1	PR
	Corning, Charleroi, PA	1	CU
3	Corning, Fall Brook, NY	2	PR
	Corning, Fall Brook, NY	3	UEL
4	Corning, State College, PA	1	PR
5	GTE-Sylvania, Central Falls, RI	1	PR
6	North American Phillips, Danville, KY	1	PR
7	Blenko Glass, Milton, WV	1	UEL
8	Brooke Glass Co., Wellsburg, WV	2	UEL
9	Corning, Corning, NY	2	UEL
10	Davis-Lynch Glass, Start City, WV	1	UEL
11	Fenton Art Glass, Williamston, WV	4	UEL
12	Fostoria Glass, Moundsville, WV	1	UEL
13	GTE, Versailles, KY	1	UEL
14	Indiana Glass, Dunkirk, IN	9	UEL
15	Jeanette Shade & Novelty, Jeanette, WV	3	UEL
16	Nourot Glass, Benica, CA	2	UEL
17	Owens-Illinois, Shreveport, LA	3	UEL
18	Owens-Illinois, Mt. Pleasant, PA	1	UEL
19	Owens-Illinois, Pittston, PA	2	UEL
20	Owens-Illinois, Toledo, OH	9	UEL
21	Paul Wissnach Galss, Paden City, WV	5	UEL
22	Peltier Glass Co., Ottawa, IL	6	UEL
23	RCA, Circleville, OH	2	UEL
24	Scandia Glass Works, Kenava, WV	2	UEL
25	Shott Optical, Duryea, PA	3	UEL
26	Vandermark Merritt Glass, Flemington, NJ	1	UEL
27	Westmoreland Glass Co., Pittsburgh, PA	4	UEL

<sup>a</sup> UEL = Uncontrolled Emission Limit (2.5 Mg/yr)  
 PR = Percent Reduction (85%)  
 CU = Cease Arsenic Use

<sup>b</sup> Some of the furnaces emitting under 2.5 Mg arsenic/year also have control devices, and may comply using either method

<sup>c</sup> Needs to install controls



Plants that are believed to have removed arsenic after proposal and which would be subject to 0.4 Mg arsenic/year emission limit if arsenic is re-introduced into glass:

1. American Stemware Corp.
2. Anchor-Hocking, Lancaster, OH
3. Anchor-Hocking, Clarksburg, OH
4. Anchor-Hocking, Baltimore, MD
5. Corning, Charleroi, PA (Soda-Lime furnace only)
6. Harvey Industries, Clarksburg, WV
7. Wheaton Industries, Millsville, NJ

Plants known to have used arsenic, but which were closed at last report:

1. Seneca Glass Company, Morgantown, WV
2. Sloan Glass, Inc., Culloden, WV

TABLE 2: Compliance Schedules

<u>Time (days)</u>	<u>Fabric Filter</u>	<u>ESP</u>
Contracts awarded or purchase orders issued	60	60
Fabrication	270	360
Shipping	30	30
Installation	240	150
Start-up	40	40
Sampling, analysis, report	90	90
Total	730	730